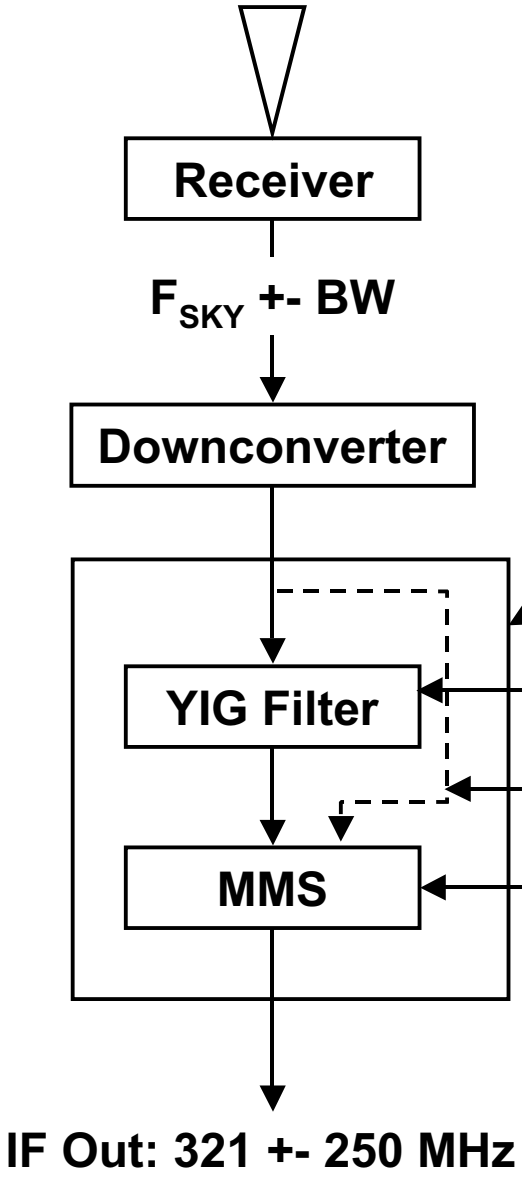
W-band Block Diagram with Down Converter



- **F_{SKY} +- BW = 90 +- 6 GHz**
  - **VLBI at 86 GHz with 500 MHz instantaneous bandwidth**
  - **3 mm spectroscopy, tunable over 12 GHz**
- **Downconverter frequency = 72 GHz**
  - **VLBI and 3mm within tuning range of YIG filter, MMS**
  - **Can existing Ka-band design be applied with 18 GHz synthesizer in place of 7.925 GHz, with similar phase noise characteristics? Good enough?**

Existing Equipment

YIG Tuning Range: 8 - 26.5 GHz

YIG can be bypassed

MMS Tuning Range: 1 - 26.5 GHz

- **Downconverter technical issues raised**
  - **18 GHz synthesizer falls in heart of tuning range of second LO stage (MMS,YIG)**
  - **Is YIG filter phase stability a problem for VLBI**